

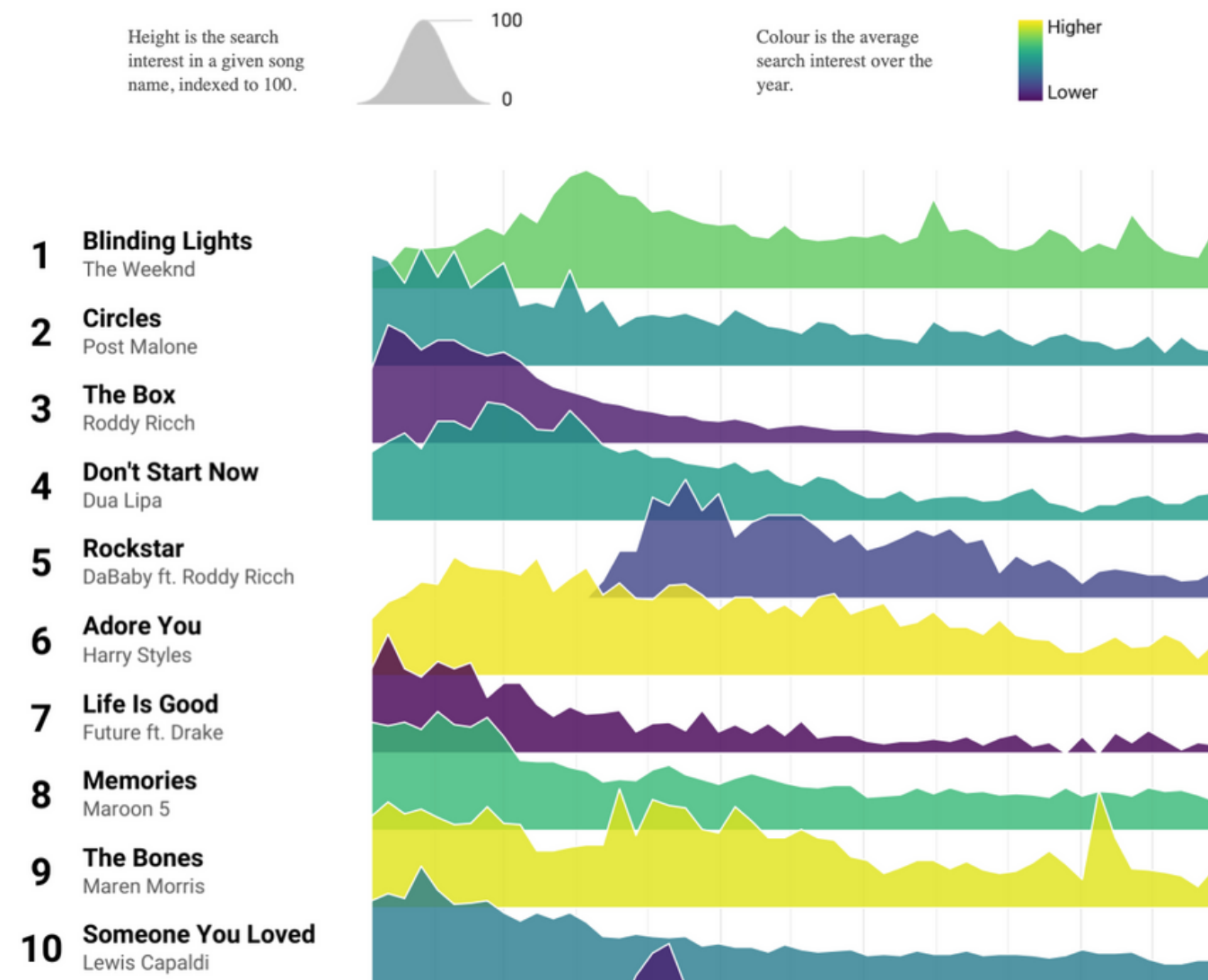
# Spotify

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# Inspiration

## Most Successful Songs of 2020

Google Search trends (US) for the top 20 songs of *Billboard's* Year-End Hot 100



“

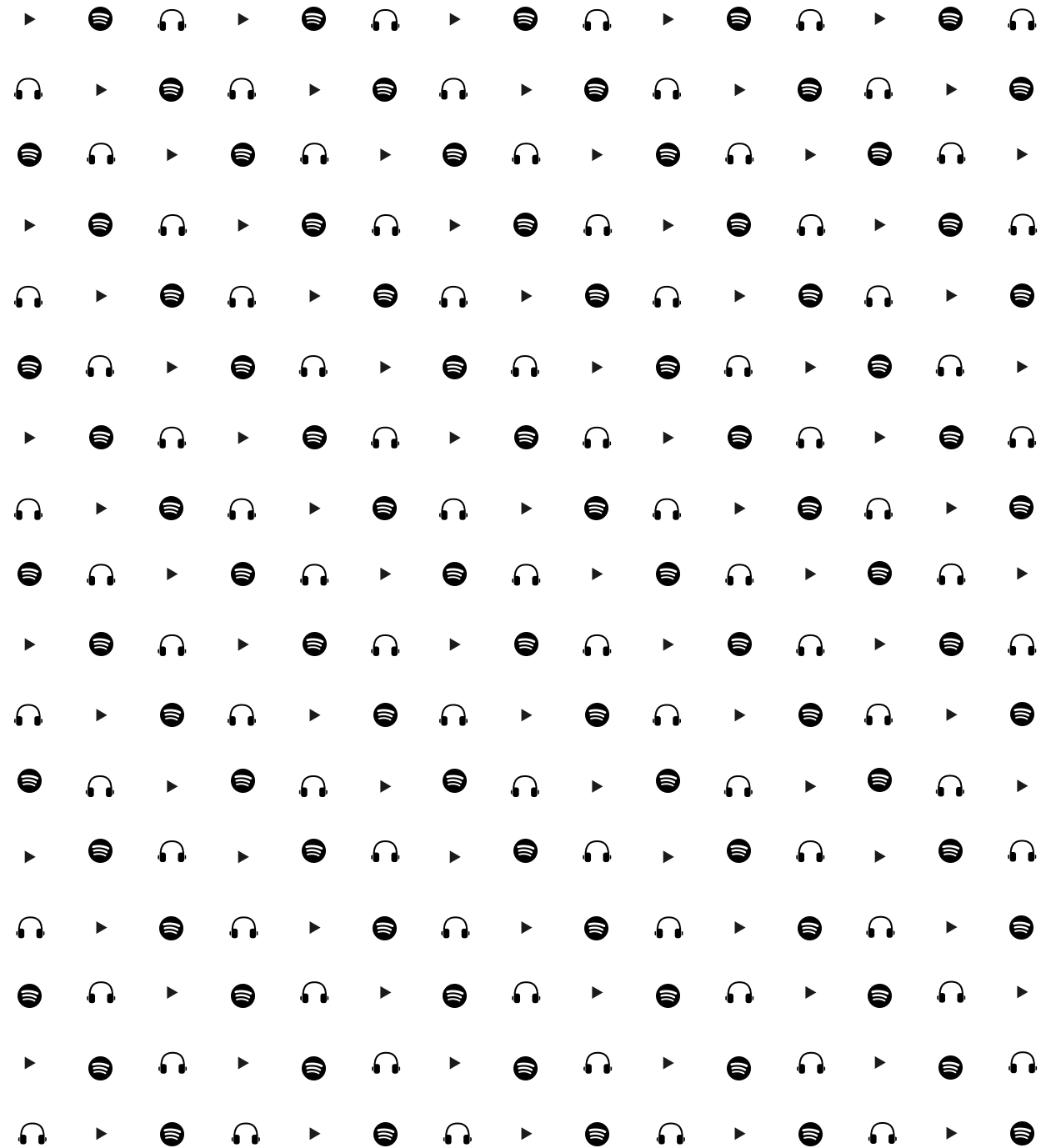
Music is to the soul what  
words are to the mind.

—  
MODEST MOUSE

GRACIOUSQUOTES.COM

2020  
WRAPPED

# AGENDA



- Hypotheses
- Data
- Audio Features
- Demo
- Conclusions
- Limitations & Future Work

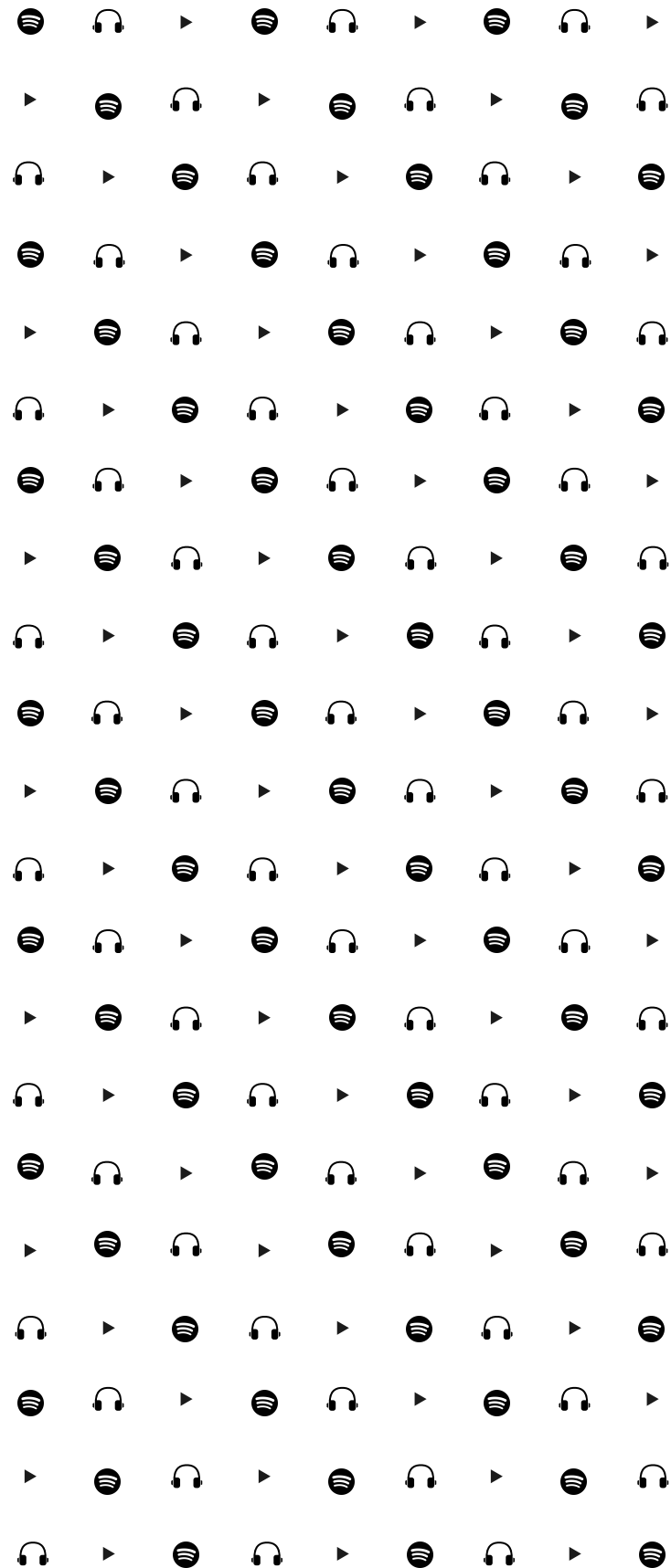
# Hypotheses

## Hypothesis 1:

The United States has the highest streams out of any country.

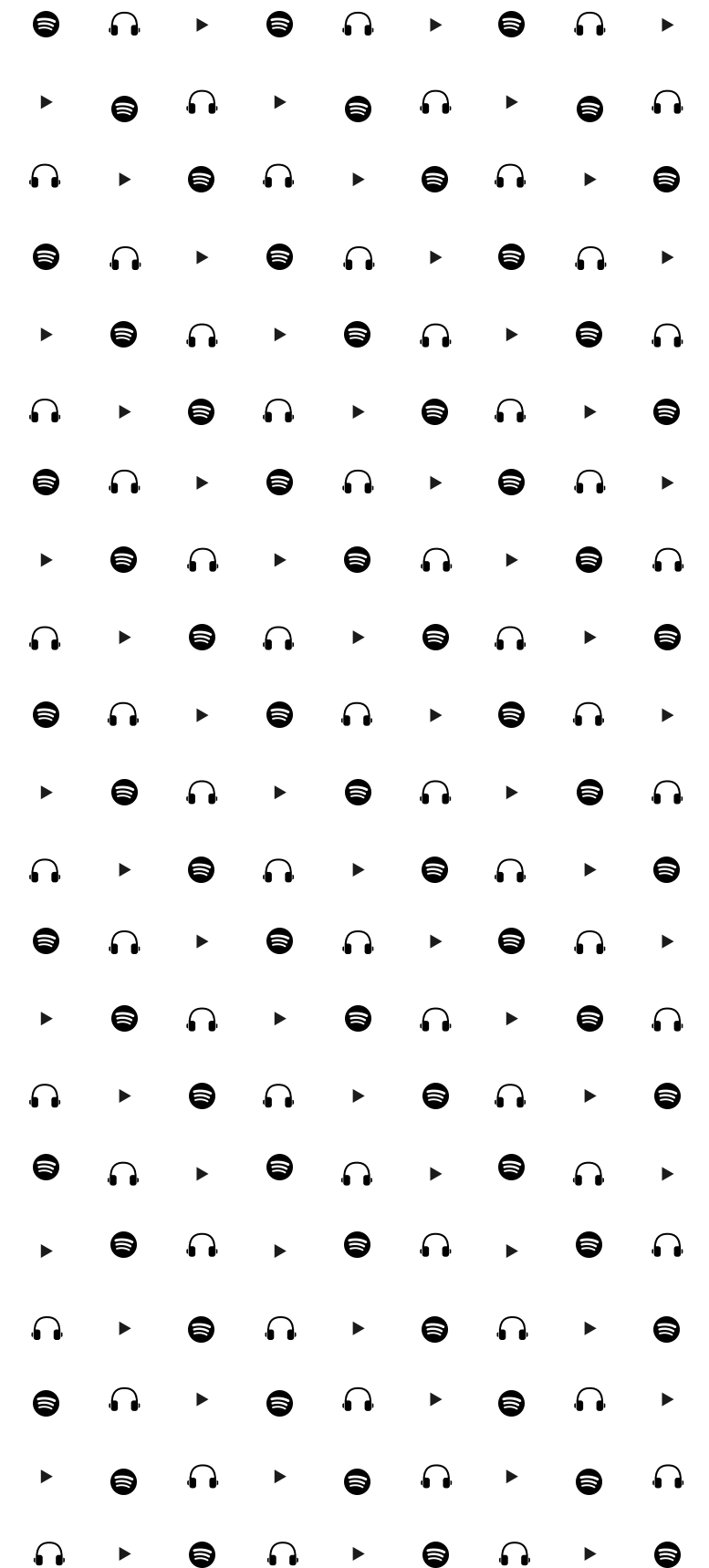
## Hypothesis 2:

Audio features, such as speechiness and danceability, have increased over time.



# Data

- 🎧 Kaggle
  - Spotify Dataset 1921-2021
  - 160K+ Tracks
- 🎧 Streams of 2020 CSV
- 🎧 Tableau Streams CSV
  - Streams up to 2017
- 🎧 Census CSV
  - Country Data



# Audio Features

- **Acousticness**- confidence measure of whether the track is acoustic.
- **Danceability**- how suitable a track is for dancing based on a combination of musical elements including tempo, rhythm stability, beat strength, and overall regularity
- **Energy**- represents a perceptual measure of intensity and activity
- **Instrumentalness**- predicts whether a track contains vocals
- **Liveness**- detects the presence of an audience in the recording
- **Speechiness**- detects presence of spoken words in a track
- **Valence**- describes musical positiveness conveyed by a track
- **Key**- Primary key of track
- **Mode**- indicates the modality (major or minor) of a track
- **Duration\_ms**- length of track in milliseconds
- **Loudness**- overall loudness of a track in decibels (dB)
- **Popularity**- popularity of an album calculated by the individual tracks (scored 0 to 100-most popular)
- **Tempo**- estimated tempo of track in beats per minutes (BPM)



# Conclusions

## Hypothesis 1:

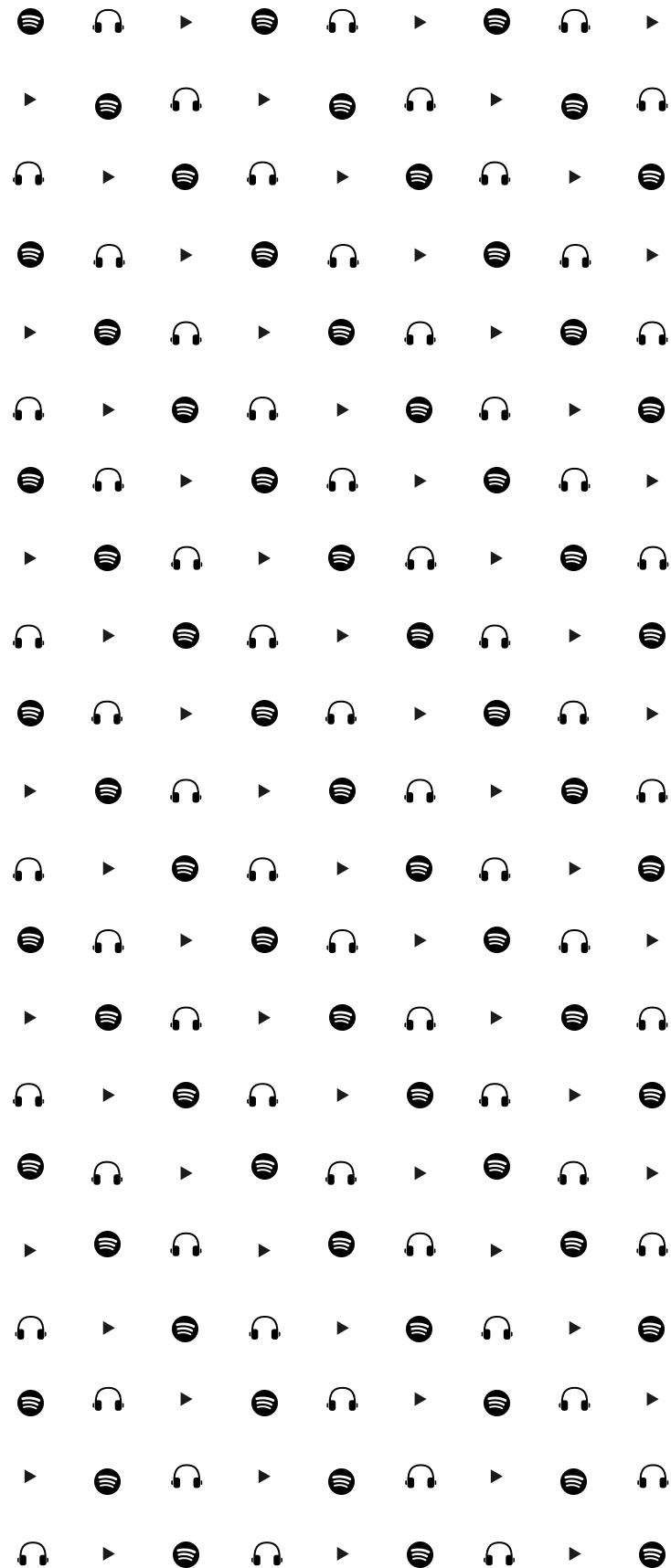
Accept the alternative hypothesis.

The United States streams the most music.

## Hypothesis 2:

Fail to reject the null hypothesis.

Speechiness has not increased over time, but danceability has increased over time.





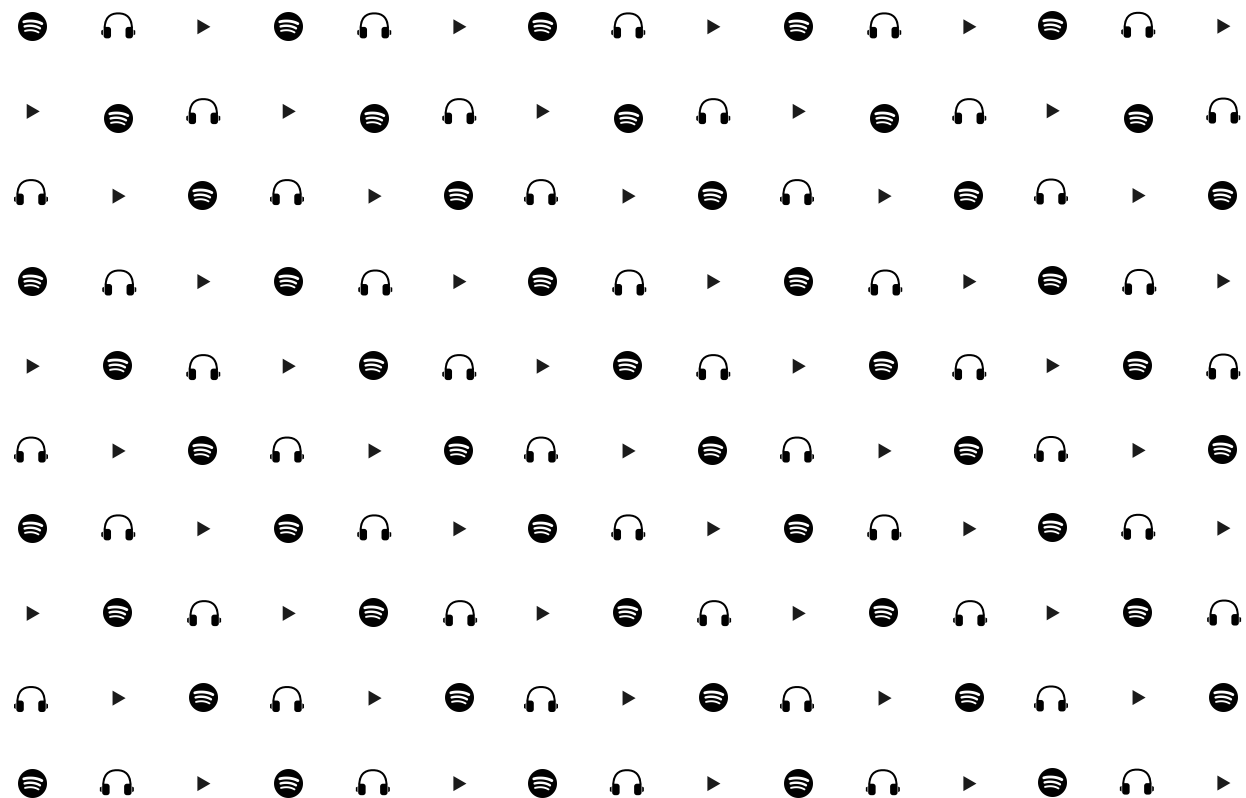
# Limitations & Future Work

## 01 Limitations

- Country Access to Spotify
- More Current Data
  - (ex. 2017 Streaming Data)
- Vast Genre Categories
- D3 Knowledge
- Time

## 02 Future Work

- Integrating Spotify API Data
- Utilizing GeoJSON to create MapBox map
- Analyzing Genres Further



# References

- **Audio Features:** <https://developer.spotify.com/documentation/web-api/reference/#endpoint-get-audio-features>
- **Data:**
  - **Countries:** [https://raw.githubusercontent.com/plotly/datasets/master/2014\\_world\\_gdp\\_with\\_codes.csv](https://raw.githubusercontent.com/plotly/datasets/master/2014_world_gdp_with_codes.csv)
  - **Kaggle:** <https://www.kaggle.com/yamaerenay/spotify-dataset-19212020-160k-tracks/notebooks>
  - **Tableau Streams:** [https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5\\_1502/worldmap](https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5_1502/worldmap)
- **Inspiration:**
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  - <https://public.tableau.com/en-us/gallery/most-successful-songs-2020?tab=viz-of-the-day&type=viz-of-the-day>
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  - [https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5\\_1502/worldmap](https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5_1502/worldmap)
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- **Visualizations:**
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  - <https://d3-legend.susielu.com/>



**Thank you**